The Identification of Research Priorities for Therapy Professions in Ireland - Summary Report

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Summary Report

Funded by the Department of Health and Children and managed by the Health Research Board

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1 Introduction

The therapy professions[1] make up a significant and growing proportion of the health-care workforce in Ireland. This means that they play a key role in providing care and treatment to the Irish population. Their input into community health care is increasing and today many therapists deliver treatments that a few years ago were available only in hospitals. Therapists are also instrumental in helping to implement Irish government health objectives.

A key government objective is supporting ongoing research to help generate and test the best available evidence for Irish health policy and health care. The literature review carried out during this study made it clear that many of the Irish therapy professions do not in fact have a long history of research capacity building nor of undertaking large research projects, and this has an impact on practice. Indeed, the need to support and encourage such research has been highlighted in policy documents, such as the *Mant Report* (HRB, 2006) and *Therapy Research – Delivering Best Health* (DoHC, 2008b), which called for the identification of research priorities for the therapy professions.

Therefore, the purpose of this study was to identify research priorities for each of six Irish therapy professions: (i) physiotherapy, (ii) occupational therapy, (iii) podiatry, (iv) speech and language therapy, (v) nutrition and dietetics, and (vi) orthoptics. This was achieved through gaining agreement on what these priorities should be from the professionals themselves as well as from key stakeholders and service users. The key stakeholders were senior health service managers and policy makers while the service users were patients who have had experience of being cared for or treated by therapy professionals.

Publicly funded research should not centre on esoteric topics which are of interest only to the professions themselves; nor should research be undertaken for its own sake. Rather, it should focus on improving the management and the delivery of the service so that the health and well-being of patients, their families and communities are enhanced across Ireland. It

[1] These include physiotherapy, occupational therapy, podiatry, speech and language therapy, nutrition and dietetics, and orthoptics.

was important therefore that the research priorities identified correlated as far as possible with government priorities for current and future health care provision in Ireland. To set the policy context for the study, an analysis was undertaken of the main strategic and policy documents in health care nationally and internationally.

This uncovered a number of recurring policy objectives, including the:

- transition of services from acute hospitals to community and home care;
- importance of public education, health promotion and disease prevention;
- need for ongoing research to inform and reform practice and health systems;
- health impact of lifestyle habits and practices;
- switch from ‘low-tech’ to ‘high-tech’ care and treatment;
- change from patient passivity to patients as partners;
- health impact of socio-economic and cultural factors;
- development and management of the health-care workforce;
- need for integrated and streamlined services;
- funding and cost-effectiveness of health systems;
- reduction of health and social inequalities;
- improvement of access for all to appropriate health care

These objectives can work as useful signposts for future research topics. For example, health promotion and disease prevention are central to the work of a number of therapy professions: physiotherapists and dieticians focus on activity and exercise and a healthy diet; and occupational therapists prepare individuals for independence and employment (and include an evidence-based approach to mental health care). Other therapeutic professionals play a significant role in managing and reducing specific conditions and complications – there is podiatry for people with diabetes, for instance, speech and language therapy for stroke sufferers, and orthoptics for individuals with vision problems. Indeed, through their practices and policies, all the therapy professions address those areas that are strategically important for the health and well-being of the population.

2 Aim of the study

In December 2008, the Therapy Advisory Unit of the Department of Health and Children (DoHC, 2008b) published *A Research Strategy for the Therapy Professions*. One of its strategic goals was to ensure that the therapy professions have a clear direction for their research activities. This study addresses this strategic goal by using the Delphi research technique to identify agreed research priorities.

A comprehensive review of the literature demonstrated clearly that there is a shortage of research within the therapy professions in Ireland. This does not auger well for their role in achieving the strategic objectives outlined above. The literature also suggests that research capacities and capabilities are more advanced in some therapy professions than in others. Physiotherapy, nutrition and dietetics, and occupational therapy, for example, have a record of being university based and research active. In contrast, speech and language therapy, podiatry, and orthoptics do not. Furthermore, despite calls from professional bodies and government departments, the actual volume of therapy research remains low, with little evidence of service user involvement being reported. This highlights the importance of identifying research priorities for these professions.

3 The Delphi technique

The Delphi technique is a structured methodology that uses a series of questionnaires (known as 'rounds') to gather information from pre-selected respondents. This questioning process continues until consensus has been reached (McKenna & Keeney, 2008; Keeney et al., 2006). The Delphi technique is especially effective for those difficult areas that can benefit from subjective judgements on a collective basis, but for which there may be no definitive answer. Therefore, it is very useful when it is difficult – if not impossible – to achieve 100 per cent consensus between any group of people on issues. An acceptable level of consensus for this study was set at 70 per cent.

Since its inception, the Delphi technique has evolved into a number of modifications. Originally developed by the RAND Corporation (and named after the Greek Oracle at Delphi), the first applications of the Delphi technique were in the field of science and technology forecasting. The Delphi technique was later applied in other areas, especially

those related to public policy issues, such as economic trends, health and education. The use of the Delphi technique in health research generally has been increasing rapidly in recent decades.

The Delphi technique has been used for many purposes within the therapy disciplines. For instance, Henschke et al. (2007) used a modified Delphi survey to determine the research priorities of those who manage low-back pain. Ferguson et al. (2008) carried out a three-round Delphi in physiotherapy to gain consensus on issues around referrals for low-back pain to outpatient physiotherapy. Research using a modified Delphi approach was also undertaken in dietetics across seven countries in the EU, the USA and Australia to gain consensus among an international expert panel on essential competencies required for effective public-health nutrition practice (Hughes, 2004). Other studies have also used the Delphi technique to focus on specific therapy areas – including best practice in occupational therapy for Parkinson's disease (Deane et al., 2003); speech and language therapy criteria for a framework for practice (Rice, 1998); intervention categories for physiotherapy for functioning, disability and health (Finger et al., 2006); physiotherapists' use of information in identifying concussion (Sullivan et al., 2008); defining the sports medicine specialist (Thompson et al., 2004); occupational therapy research priorities in mental health (Bissett et al., 2001); and leadership, administration, management and professionalism in physiotherapy (Lopopolo et al., 2004).

The preset study used the 'classical Delphi' method: this entails sending a panel of informed individuals (known as 'experts') a questionnaire that seeks their judgement on a particular issue ('Round 1'). After they have responded, the data are summarised and a new questionnaire is designed, based solely on the results obtained from the first round of results. For 'Round 2', this second questionnaire is returned to each participant and he or she is asked (in the light of the first round's results) to reconsider his or her initial judgement and to once again return responses to the researcher. Repeat rounds of this process may be carried out until consensus has been reached. In the current study, three rounds were carried out.

In this study, the expert panels were recruited from different sectors relevant to the therapies professions. The academic panel members were recruited through universities and further education colleges across Ireland. Policy makers and other key stakeholder panellists were recruited from government departments and health service organisations. Service users

were recruited through support organisations. An extensive trawling exercise was undertaken to recruit members to each of the panels, during which potential panel members were contacted and asked to take part in the study. The planned target size for each panel was 30. Following a comprehensive recruitment campaign, some panels exceeded that target considerably, while others – for a variety of reasons – did not. For instance, as the study progressed, it became apparent that the target of 30 was not realistic for some of the smaller therapy professions.

4 The study

As noted above, a three-round classical Delphi technique (McKenna, 1994) was used to identify research priorities for the therapy professions, and the consensus level determined as 70 per cent. This meant that an identified research idea or issue had to achieve agreement from 70 per cent of each expert panel before it could be considered a research priority.

A total of six professional expert panels – including both clinical and academic staff from the six therapy professions – were recruited across Ireland for the study. Each panel member met specified inclusion criteria, such as employment experience or academic qualifications. The numbers of respondents included in each of the eight panels are shown in Table 1 (the full Delphi sample totalled 245 expert panel members). Table 2 provides a breakdown of the composition of each expert panel at the outset of the study.

Table 1: Number of respondents in each expert panel

Panel	Number
Key stakeholders	24
Physiotherapy	63
Occupational therapy	39
Clinical nutrition and dietetics	39
Speech and language therapy	41
Podiatry	15
Orthoptics	9
Service users	15
Total	**245**

Table 2: Composition of expert panels at Round 1

Panel	Composition	Total number
Key stakeholders	Health managers – 8 Senior therapy managers – 8 Government policy officers – 6 Research and development officer – 1 Deputy commissioner – 1	24
Physiotherapy	Academics – 23 Clinicians/managers – 40	63
Occupational therapy	Academics – 14 Clinicians/managers – 25	39
Nutrition and dietetics	Academics – 6 Clinicians/managers – 33	39
Speech and language therapy	Academics – 18 Clinicians – 23	41
Podiatry	Academics – 2 Clinicians/managers – 13	15
Orthoptics	Academics – 1 Clinicians/Managers – 8	9
Service users	Individuals – 8 Organisations: Asthma Society of Ireland; Cystic Fibrosis Association of Ireland; Diabetes Federation of Ireland; Disability Federation of Ireland; GROW Mental Health; Irish Hospice Foundation; Parkinson's Association of Ireland. Total – 7	15
Total		**245**

As is common in these types of study, three Delphi rounds were administered:

- Round 1 asked each participant to identify what he or she thought were important topics for research in the therapy professions.
- In Round 2, the results (in a structured questionnaire) were returned to each respondent, with the request that he or she rank the importance of each.
- For Round 3, Round 2 results were again fed back to respondents and they were asked to reconsider their rankings. They were also asked to indicate a time frame for the commencement of research for each priority.[2]

[2] A fuller description of the administration of the study and data analysis can be found in the main report.

Table 3 gives the response rates to Rounds 2 and 3: these were calculated as the percentage of the number of participants who received questionnaires for that round.

Table 3: Response rates to Rounds 2 and 3

Panel	Round 2	Round 3
Key stakeholders	22 (91%)	15 (68%)
Physiotherapy	55 (87%)	35 (64%)
Occupational therapy	34 (87%)	16 (47%)
Nutrition and dietetics	30 (76%)	21 (70%)
Speech and language therapy	30 (73%)	20 (67%)
Podiatry	13 (87%)	10 (76%)
Orthoptics	7 (78%)	6 (86%)
Service users	8 (53%)	6 (75%)
Total	**199 (79%)**	**129 (67%)**

5 Data analysis

Round 1 produced copious qualitative material from each of the eight panels. This was comprised of hundreds of individual statements, each identifying research priorities. The qualitative material was content analysed for themes using Miles and Huberman's (1994) approach. Once the Round 1 transcriptions and analysis for each panel were undertaken, results were used to design the Round 2 questionnaire.

The Round 2 questionnaire was designed using the items generated from Round 1. The panel members were asked to rate each of the priorities on a five-point Likert scale from 'most important' to 'least important' (Likert, 1932). Summary statistics (frequencies and descriptives) were computed on the data to determine the number of statements that had reached over 70 per cent consensus. This was used to give feedback to the panel members on both the panel's overall response from Round 2 and the individual's own response.

The Round 3 Delphi questionnaire was designed around the results of Round 2. As before, frequencies and descriptives were computed on the data to establish the number of statements that had reached consensus. The mean of each of these statements was then calculated and used to rank each statement in order from 'most important' to 'least

important'. The top 20 priorities from each panel, along with the identified time frames for implementation of these priorities are summarised in Appendices 1 to 8 below. They are discussed in more detail in the Findings section of the main report.

6 Conclusions

6.1 Comparative overview of panel outcomes

Once the research priorities from the discipline-specific panels, the service user panel and the key stakeholder panel were triangulated, several significant themes (which could be recommended as key research priorities) emerged. Most of these could be categorised into seven major areas:

1 practice evaluation;

2 health promotion;

3 service organisation;

4 clinical academic training;

5 service user perspective;

6 cost-effectiveness of services;

7 epidemiology.

Table 4 summarises the rankings under each of the themes and also identifies key areas of practice and the main techniques/interventions that should be prioritised by each expert panel. It shows the ranking for the top 20 priority items for each panel across a range of topics, along with the main areas of practice and techniques that are a priority for research.

As can be seen, the themes varied across the eight panels. The physiotherapy panel identified 'practice evaluation', 'health promotion', 'clinical academic training', 'cost-effectiveness' and 'service organisation' as priority areas. On the other hand, the occupational therapy panel focused less on 'service organisation' and more on 'practice evaluation' and 'health promotion'. It is worth noting that occupational therapy was the only panel that produced an item that formed the category 'other' in the table ('Research the impact of environmental intervention on occupation').

Table 4: Summary of priority areas

	Practice evaluation	Health promotion	Service organisation	Clinical academic training	Service-user perspective	Cost-effectiveness	Epidemiology	Other	Areas of practice	Techniques/interventions
PT	2, 4, 5, 6, 8, 9,12, 13, 15, 17, 19	6, 8, 20	2 (PC)	1,10,11,16, 18		14			Obesity, older adults, chronic disease, bone health, ICU	Bobath facilitatory movement vs normal movement; cardiorespiratory techniques, manipulation, electrotherapy, innovative vs conventional techniques, group vs single, exercise
POD	4,13,16,18, 19	17	4, 8, 9,11,12,1415, 20 (PC)			9	14		Amputation, diabetes, older adults, rheumatoid foot, falls	Nail surgery, verruca treatment
OT	1, 2, 3, 6, 10,12,13,16 ,17,18,19	4, 9,10, 20			7,13	6, 8		15 env.	Vocational rehabilitation, stroke, encephalitis, obesity, mental health, dementia	Splinting, seating, vocational rehabilitation techniques
SLT	2, 3, 4, 5, 6, 7, 8, 9,11,18	7, 9	6,12,13,16	1	10, 16,16		14		Children and adolescents, severe phonological disorders, receptive/expressive language disorder, Down's syndrome, autistic spectrum disorder, voice and motor speech disorders, special needs, Specific Language Impairment	Talk tools, Lámh language class
N&D	1, 2, 4, 5, 10,11,12,13 ,14,15,16	3,5,8		19			9		Obesity, diabetes, nutrition support, health promotion, eating disorders, student training, nutrient requirements	Behaviour modification techniques
ORP	4,9,11,19		1, 2, 3, 6, 7, 8, 11	11, 19		10			Vision screening, specific learning difficulties	Occlusion therapy, amblyopia treatment
KS	10,14,16		2, 3, 5, 6, 11,12,13,14,1 6 (PC, PCS)	15, 19	6, 18	1, 20			Chronic disease, stroke in the young	
SU	3, 8, 9,11,15, 18,19	1, 2,12, 14	5,10,12,15				4, 6, 19		DCD, mental health, dementia, diabetes, cancer, ADHD, asthma, chronic illness	Family support, 'mutual help'

Key: ADHD = attention deficit hyperactivity disorder; DCD = developmental coordination disorder; env. = environmental aspects; 'Lámh = manual sign system used by children and adults with intellectual disabilities and communication needs in Ireland; N&D = nutrition and dietetics; ORP = orthoptics; PC = primary care; PCS = patient-centred service; PT = physiotherapy; POD = podiatry; OT = occupational therapy; SLT = speech and language therapy; KS = key stakeholders; SU = service users; talk tools = oral placement therapy techniques developed in the US.

6.1.1 Practice evaluation

'Practice evaluation' was the dominant theme across the six professional panels, echoing the main recommendation of the Irish *Report of the Commission on Patient Safety and Quality Assurance* (DoHC, 2008a): high-quality care depends on evaluation and research evidence. The nutrition and dietetics panel and occupational therapy identified the greatest number of these items, followed by physiotherapy, speech and language therapy, podiatry and orthopics. What is interesting is that key stakeholders identified only three statements under practice evaluation and the service users identified seven. This is not surprising: therapists identified more statements that related to their practice. After all, this reflects the main challenge in their job which is to provide optimum (evidence-based) treatment for individual patients on a day-to-day basis. In contrast, the emphasis for key stakeholders is often at the strategic level and so it is unsurprising that their priorities centred on service organisation, evaluation and cost-effectiveness. They also focused on how best to deliver services that represent value for money, particularly with respect to teamworking across secondary and primary sectors.

Some overlap was found between the panels – for instance, in those specific areas of practice that are a priority for evaluation and which require the development of an evidence base. These included obesity, care of older adults (and those with dementia), chronic disease, mental health, and diabetes. Service users identified cancer care as a priority, although this is not reflected in any of the therapy professionals' items.

Four areas of practice emerged as significant research priorities under the theme of practice evaluation: (a) obesity; (b) diabetes; (c) chronic disease management; and (d) older adult care.

(a) Obesity

Physiotherapists, occupational therapists and dieticians all pointed to the need for urgent research on obesity. This is not surprising in the light of the emphasis placed on obesity in terms of its adverse effect on health, well-being and longevity by many current national and international health policies (Ireland: DoHC, 2008a; DoHC, 2009. Europe: Donaldson & Banatlava, 2007. USA: US CDCP DHHS, 2009a). Indeed, investigating how exercise and behavioural techniques can be used to manage obesity in children and adults emerges as a

central research priority when research priorities are combined *across* therapies. In addition, it was recommended that occupation therapy research focuses on interventions – such as community programmes of health promotion through lifestyle change, education programmes, home modifications, adaptations and equipment; compensatory training in activities of daily living; wellness programmes for children, teenagers and adults; and play and physical education in schools. Investigations should also consider the biopsychosocial needs of people with obesity; their self-perceptions and life experiences; and how to develop environments to enable their participation in physical activities.

(b) Diabetes

Podiatrists, nutritionists and dieticians and service users were the greatest supporters for research on this topic. Diabetes research is also a major theme in national and international strategies (UK: DH, 2009a, b. Europe: Donaldson & Banatlava, 2007. USA: US CDCP DHHS, 2009b.) because of its role in severe complications for cardiovascular or ocular health, and the risk of lower-limb ulceration and amputation. Diabetes also emerged as a central condition that linked into other areas requiring research attention – it was evident, for instance, that diabetes and improved care/cost-effective strategies formed a common goal across the key stakeholder and podiatry panels. Therefore, the priority research areas for diabetes are: investigations into lower-limb amputation prevention; service organisation in the delivery of multidisciplinary management of diabetes; and the overall need to research interventions to improve care for people with diabetes. These triangulated research priorities formed a common goal from the podiatry, nutritionists and dieticians, key stakeholder and service user panels.

(c) Chronic disease management

Chronic disease management was a priority across all the eight panels and this is in line with many recent policy documents from Irish, European and American governments (Ireland: DoHC, 2008c. UK: DH 2009a. USA: US CDCP DHHS 2009c) (see Tables 2–3 of the main report). Specific chronic conditions were those that are acknowledged widely to increase mortality and morbidity in Ireland: diabetes (as noted above); cardiovascular conditions (heart disease and stroke, in particular young stroke); respiratory conditions; and cancer. However, research into other chronic diseases was also seen as important, especially research that examines those painful and distressing conditions that affect a person's quality

of life, limit activity or inhibit the ability to work – for example, arthritis, low-back pain or mental health problems. A range of appropriate techniques and/or interventions to deal with chronic conditions was also identified across the panels (see Table 4 above).

The theme of chronic disease management overlaps with that of health promotion and indicates that while the therapy professions need to identify the most cost-effective approaches to managing chronic disease and promoting self-management, this should be coupled with a greater drive towards disease prevention, public education, health promotion and a 'wellness' culture. This is reflected too in the Irish Department of Health and Children's recent framework document *Tackling Chronic Disease* (DoHC, 2008c), which targets lifestyle change, health education and promotion, appropriate access to care and a push towards primary prevention.

(d) Older adult care

Physiotherapists, occupational therapists, podiatrists and service users all identified ageing and problems and conditions associated with it, such as risk of falls and dementia. Given the demographic shift towards greater longevity, health problems associated with ageing are seen as high research priorities and this is also borne out in current Irish health strategies (McKee & Belcher, 2004; HSE, 2008). Health professionals prioritised research that would enhance independent living, provide more therapy in the community, keep people at home for longer, reduce hospital admissions and improve their quality of life. Service users specifically identified research into dementia as a research priority.

6.1.2 Health promotion

All the panels except orthoptists and key stakeholders prioritised health promotion research from both single and multidisciplinary perspectives. This featured particularly strongly in the occupational therapy priorities, with specific reference to health and well-being, disease prevention and education for healthy behaviours. This is unsurprising – as a discipline, occupational therapy places its focus on humans as occupational beings and has a central philosophy that emphasises the positive effects of occupation on health at both individual and societal levels (Wilcock, 1998).

As noted above, health promotion was a major recurring theme across most panels, with two significant sub-themes:

(a) Health and well-being impact factors

With the shift of emphasis from treating ill-health to promoting health and well-being in Ireland (McKee & Belcher, 2004; DoHC, 2001 and 2006; HSE, 2008) it is clear that health research should focus on the production of an evidence base for healthy lifestyle behaviours. Each panel presented slightly different topics in relation to health promotion. For instance, physiotherapists point to the use of exercise to prevent childhood obesity, promote bone health and address the risk of falls among the elderly population. Occupational therapists identified the need to understand the occupational factors that relate to obesity, mental health and positive ageing and how this might lead to occupational satisfaction. Speech and language therapists highlighted health promotion regarding early and indirect interventions in disability and in the health education and training of carers and teachers. Podiatrists focused on the prevention of diabetic foot-related amputation through foot-care programmes. Nutrition and dietetics was the most emphatic panel regarding evidence-informed health care: this panel's top research priority is to develop the evidence base for the prevention of obesity, indicating the importance of early intervention and education.

(b) Disease prevention and health education

Disease prevention and education for healthy behaviours and attitudes were also recognised as priorities for research, especially concerning the development of knowledge and insight into best models and methods. Again, this mirrors the general themes of a range of policies and strategies (Ireland: DoHC, 2008c. UK: DH UK, 2009b; Scottish Executive Department of Health, 2002. USA: US CDCP DHHS, 2006 and 2009a, b, c. Europe: McKee & Belcher, 2004). In relation to the prevention and treatment of disease, obesity and diabetes emerged as the most important target areas. Strategies to address these and the other objectives include health-promotion initiatives, audit and evaluation of current practice, and research to establish the effectiveness of nutrition indicators and health-outcome measures.

6.1.3 Service organisation

The key difference between the key stakeholder panel and the six professional panels was that key stakeholders placed a much greater emphasis on service organisation and delivery. (It is however worth noting that service organisation was also highlighted by podiatrists, physiotherapists and orthoptists.) A common goal was the importance of research on the effectiveness of the primary care model and on teamworking. The main service organisation topics are:

(a) An increased focus on primary care and a seamless primary–secondary care interface, reflecting national and international health policy (see Table 1 of the main report).

(b) Teamworking, specifically multidisciplinary teamworking, as a focus of research studies, as well as interdisciplinary research programmes.

(c) Referral systems and issues surrounding the relevance and management of referrals.

6.1.4 Clinical academic training

Not surprisingly, clinical academic training was considered very important by most of the professional panels, including the dieticians, speech and language therapists, orthoptists and the physiotherapists. While the key stakeholders did identify the importance of developing research capacities in the therapy professions, they did so in only two of their top 20 priorities and only as a long-term objective. Nonetheless, in order for research capacity initiatives to succeed in the clinical setting, it is vital that key stakeholders such as policy makers and managers are committed fully to this process.

A 2006 survey of the number of PhD graduates in each of the six therapy professions showed that it is necessary to increase research-trained therapists in all six disciplines in order to drive the Irish national research agenda forward and ensure ‘the enhancement of health and social care services across primary acute and community care’ (DoHC, 2008a). One suggestion made by some of the panels is the creation of clinical academic career pathways similar to those in the UK as envisaged by Forfás & the Department of Health and Children (2006) and the Finch Report (UKCRC, 2007). Policy documents also highlight the

importance of professional education and training (Ireland: DoHC, 2001; N. Ireland: DHSSPSNI, 2009; USA: US DHHS, 2008). The main sub-themes are:

(a) Research the best approach for the construction of clinical academic career pathways that reward research and provide protected time.

(b) Develop postgraduate education and training for each therapy profession.

Linked to this priority, the key stakeholders identified the need to develop research partnerships between academic and clinical centres; this was not identified by any of the clinical panels or the service users. This may be because the key stakeholders may be more interested in processes that will help embed research into the health service. They would also be more aware of the recommendations by the Advisory Council for Science Technology and Innovation that links between academic centres and the health service need to be put in place in order to strengthen health services research (Forfás & DoHC, 2006).

6.1.5 Service user perspective

In comparison to the other panels, key stakeholder panel members seemed to be the most aware of the policy shift relating to the greater involvement of service users. Even so, this was also prioritised by occupational therapists and speech and language therapists. These panels called for:

(a) Service user involvement as partners through all stages of the research process, from the construction of research questions, the design and implementation of studies to the writing-up and dissemination of results.

(b) The seeking of service user views and experiences in relation to conditions, treatments and services.

6.1.6 Cost-effectiveness of services

A key tenet of modern health care is that control of costs and value for money are central to all decisions made. The panels that identified cost-effectiveness as a research priority were key stakeholders, occupational therapy, physiotherapy, podiatry and orthoptics. There were two different angles on this.

(a) To seek evidence on the cost-effectiveness of a particular professional service (identified by podiatry and orthoptics).

(b) To seek evidence on the cost-effectiveness of particular interventions such as community care for dementia.

Cost-effectiveness was also a strong theme in the stakeholder group (ranks 1, 20). This is unsurprising as cost-containment in publicly funded health services is a major area of national and international interest.

6.1.7 Epidemiology

Epidemiology is the study of factors affecting the health and illness of populations, and is highly regarded in evidence-based health care for identifying risk factors for disease and determining optimal treatment approaches to clinical practice. It is not surprising therefore that it emerged as a theme across several panels, especially the service user panel. Four sub-themes emerged under this heading:

(a) The incidence of diabetic foot: ulceration and amputation rates.

(b) The nutritional status of the population, specifically with regard to vitamin D.

(c) The incidence and prevalence studies of speech and swallowing disorders.

(d) The causes and incidence of developmental disorders, such as attention deficit hyperactivity disorder (ADHD) and developmental coordination disorder (DCD).

6.2 Recommended time frames for commencing the research

Table 5 gives the identified time frames for each of the themes as recommended by the expert panels. A short time frame indicates that the research should commence immediately. The two major themes which received a short-term rating and thus seem to be allocated a sense of urgency were service organisation and epidemiology. Both these themes are linked in that epidemiological research should inform service planning and implementation (the similarity in time frames is not, as a result, surprising). Research which should start immediately suggests a high level of concern, with both effectiveness and integration in the delivery of services and the importance of those services being designed around evidence of need and evaluation of existing provisions.

Table 5: Suggested time frames for major themes

Major theme	Suggested time frame
1. Practice evaluation	Medium
2. Health promotion	Medium
3. Service organisation	Short
4. Clinical academic training	Medium
5. Service user perspective	Medium
6. Cost-effectiveness	Medium
7. Epidemiology	Short
8. Other	N/A

Key: Short term – Research should commence immediately; Medium – research should commence within 12 months.

A medium time frame suggests that the research should commence within 12 months. The medium-term rated themes (practice evaluation, health promotion, clinical academic training, service user perspective and cost-effectiveness) all stem from a view that these themes will require a longer time period to investigate, since extensive planning and pre- and post-measures of variables are needed in these types of study. A long time frame suggests that the research should commence within five years. Few of the research priorities were seen as needing a long time frame; indeed, none of the major themes attracted a long time frame.

It was up to the panel members themselves to decide on the urgency or not of addressing the identified research priorities. Considering that there has been little research carried out by the therapy professions in Ireland, perhaps it is not surprising that many of the time frames were identified as short or medium term.

7 Recommendations

7.1 General recommendations

From the conclusions outlined above and taking into account the themes identified, the following general recommendations can be made.

7.1.1 Practice evaluation

In alignment with the HSE Corporate Plan (HSE, 2008) there is an urgent need for research into the evaluation of clinical practice from a multidisciplinary perspective.

Recommendation 1: Research should be undertaken into the evaluation of clinical practice from a multidisciplinary perspective in the following topics: obesity; diabetes; chronic disease management; and care of older adults. In addition, clinical studies are needed to evaluate behavioural approaches to prevent chronic disease and to manage existing chronic disease.

7.1.2 Health promotion, disease prevention and patient education

Recommendation 2: Multidisciplinary research programmes are required to investigate the following: factors that impact on health and well-being; health promotion and disease prevention; and patient education.

Recommendation 3: Identify and evaluate the role that each therapy profession plays in health promotion and disease prevention.

7.1.3 Service organisation

Service delivery and organisation research should be prioritised in order to address the research priorities identified both by stakeholders and the therapy professions. Specific research questions should focus on the clinical and cost-effectiveness of primary care teams in preventing hospital admissions and enhancing patient self-management. Research should also be undertaken to explore how to optimise multidisciplinary teamworking, referral systems, and communication between and across the health professions and with patients and carers.

Recommendation 4: In order to support research projects and programmes focused on service delivery and organisation, mechanisms should be considered for supporting research in these areas.

7.1.4 Clinical academic career

Government should look favourably on research proposals and programmes that include an element of research capacity and capability building. A steering group composed of stakeholders in health service, academia and funding agencies should be established to explore the development of clinical academic careers in the therapy professions.

Recommendation 5: Explore how best to develop clinical academic training for members of the therapy professions.

7.1.5 Service user perspective

Service users should be involved in all aspects of the research process from design to dissemination. Researchers should be explicit in communicating how the proposed research has implications for enhanced user engagement. Particular attention should be paid to the needs and experiences of service users and their carers.

Recommendation 6: Research should be carried out on how best to involve service users and their carers as partners in research plans, processes and outputs.

7.1.6 Cost-effectiveness

Value for money is central to decision making in a modern health service. The balance between clinical effectiveness and cost-effectiveness should be investigated.

Recommendation 7: Research should be undertaken into the cost-effectiveness of specific therapy treatments.

7.1.7 Epidemiology

The science of epidemiology underpins health policy and strategy because it identifies the factors that affect the health and illness of populations. This information feeds evidence-based policy and thereafter evidence-based practice.

Recommendation 8: Epidemiological research should be undertaken in the following areas: the incidence of diabetic foot; ulceration and amputation rates; the nutritional status of the

population specifically with regard to vitamin D; the incidence and prevalence studies of speech and swallowing disorders; the causes and incidence of developmental disorders such as attention deficit hyperactivity disorder (ADHD) and developmental coordination disorder (DCD).

7.2 Specific recommendations

Some specific recommendations emanating from the research priorities identified by individual therapy professions can also be made.

`7.2.1 Occupational therapy

Recommendation 9: Systematic reviews should be undertaken on the effectiveness of participation in occupation for the management of obesity and the cost-effectiveness of facilitating both early discharge and occupational therapy intervention in community care for dementia.

Recommendation 10: Both quantitative and qualitative research should be undertaken on occupation-based interventions and techniques. Specific topics for study include: obesity prevention; improved mobility; falls prevention; mental health; dementia; positive ageing; and vocational rehabilitation.

7.2.2 Podiatry

Recommendation 11: Research should be undertaken in diabetes, with a focus on podiatry, specifically for diabetic foot management, ulceration and lower-limb amputation prevention.

Recommendation 12: Epidemiology research should be carried out into service organisation. There should also be more clinical research into investigating foot ulceration management and incidence of lower-limb amputations.

Recommendation 13: Training in research should be made available to podiatrists.

7.2.3 Speech and language

Recommendation 14: Evaluation of speech and language therapy interventions is required: the care and treatment of children and adolescents should be a particular focus for attention.

Recommendation 15: Collaboration between speech and language therapy and education is needed in order to evaluate the reliability and validity of tools that have widespread use, such as talk tools, (oral placement therapy techniques developed in the US) and Lámh (a manual sign system used by children and adults with intellectual disabilities and communication needs in Ireland).

Recommendation 16: Service delivery models for speech and language therapy need to be developed further and evaluated across a variety of settings and client groups. This should include recommending optimal amounts and types of therapy for specific conditions.

7.2.4 Orthoptics

Recommendation 17: Research should be undertaken on: patient referrals; professional development and specialisation; and long-term quality of life effects of vision screening.

Recommendation 18: Service delivery should be researched, taking into account the effects of the non-availability of orthoptic services and, linked with this, workforce requirements.

Recommendation 19: Research should be commissioned into the necessary requirements for the delivery of an effective orthoptic service.

7.2.5 Physiotherapy

Recommendation 20: Clinical studies are needed to evaluate the optimum exercise approach to use in order to prevent the development of chronic diseases and to also manage existing chronic disease. Specific research questions should address group-based versus individual exercise approaches, and clinic versus home-based approaches; in addition, the specific role of exercise in child obesity should be investigated.

Recommendation 21: Establish an evidence base for the most commonly used techniques in physiotherapy across the range of specialist areas.

Recommendation 22: Investigate the role of physiotherapists (particularly in primary care) in health promotion of the elderly in terms of reducing falls, maintaining bone health and reducing hospital admissions and improving quality of life.

7.2.6 Nutrition and dietetics

Recommendation 23: Research should be conducted into the evaluation of current dietetic practice in a range of topics in order to develop evidence-based national guidelines for the dietetic management of disease and to inform the development of future strategies aimed at the treatment of nutrition-related disease.

Recommendation 24: Research which uses established and new methodologies aimed at the prevention of the major chronic diseases, including obesity, diabetes and cancer is needed.

8 Limitations of the study

As with all research studies, this study too had some limitations which require highlighting here. These were related firstly to the consensus level and the emerging data and secondly to the difficulty in recruiting the target numbers of participants among the service user population.

8.1 Service user recruitment

Much has been written on the topic of service user involvement in health research, detailed in previous sections of the full report (Faulkner & Thomas, 2002; Beresford, 2007; Thornicroft et al., 2002). In relation to research focused on the development of health policy, the issue of service user involvement is perhaps addressed most notably by Preston-Shoot (2007). Service users are seen to be ‘experts by experience’ yet a number of barriers were noted that have an impact on their involvement in health and policy research. Broadly, these were: patchy involvement, with their views being reported through third parties; a constrained role within the overall research process; and a sense of falling short of any meaningful partnership or participation.

This was borne out in the current study. In spite of extensive efforts to enlist organisations and individuals as potential participants, the service user panel was smaller and less comprehensive than had been anticipated. It is likely that this shaped – and possibly skewed – the priority list that emerged. The reasons for the small number of service user participants were discussed at length with the Research Steering Group, the Research Advisory Group, some community and hospital therapy managers and other researchers. Telephone discussions with some service user organisation representatives were also held. These explorations suggested the following explanations.

- Members of service user organisations stated that they are 'bombarded' with requests to participate in academic research studies. They often feel more inclined to participate when the research is service-user led or initiated.
- The topic may have seemed slightly abstract or off-putting to service users.
- While university ethical approval was in place for the study, the health service institutions and clinics that were approached, as well as some of the large service user organisations, also had lengthy ethics and governance procedures of their own. The timescales of these procedures were outside the time frame remit of the study.

These experiences can inform future research of this type and clarify how to involve service users in a more productive manner.

- Involve service users in all steering and advisory groups from as early as possible in the research process.
- Approach potential participants face to face: this can be more inviting than contact through the post.
- Explore site-specific and organisation-specific ethics and governance requirements at an early stage to allow recruitment procedures to be initiated within the time frame of the study.
- Write service user material that is accessible to 'lay' readers.

This key limitation of the study needs further discussion and should be prioritised in the design and implementation of further studies.

8.2 Consensus level

The study required a 70 per cent consensus across the panel members. It is possible that a research priority identified in Round 1 by a specialist in a particular discipline did not achieve consensus because it was too esoteric or specialised for most of the other panel members to vote for in that discipline. Conversely, while it is also probable that some of the top priority items are too broad based and non-specific to be useful in the targeting of government funds, they attracted a high ranking from the professional therapist panel members.

9 Summary

Several reports have identified the importance of the therapy professions in helping to address the policy imperatives in Irish health care. However, to make a meaningful contribution to this agenda, the therapy professions must have a body of knowledge and skills that pertain to their work and are based on the highest-quality research. The literature review showed that therapy research in Ireland was not well advanced and for some professions it was in an early stage of development. This had been acknowledged in previous reports from sources such as Mant (HRB, 2006) and the Department of Health and Children (DoHC, 2008b) and there had been a call for research priorities to be identified specifically for the therapy professions.

This research team used the Delphi technique to gain consensus among six different therapy professions as to what these research priorities should be. Key stakeholders and service users also got the opportunity to identify research priorities for these professions. Following analysis of the data, it was possible to identify the top 20 research priorities for each of these responding groups (see Appendices 1–8). A careful study of these priorities showed that there was overlap and repetition across and between groups. It was possible to identify seven recurrent themes across many of the groups (see Table 4). These were: (i) practice evaluation; (ii) health promotion; (iii) service organisation; (iv) clinical academic training; (v) service user perspective; (vi) cost-effectiveness; and (vii) epidemiology. Many of these themes reflected the policies and strategies highlighted in the introduction.

This study provides policy makers, health strategists, research funders and therapy professionals with a road map regarding those clinical and professional issues that must be

addressed by research as a matter of priority. However, it should be stated that this is time limited and as health care develops, so too will those research topics that should be prioritised. Nonetheless, this is the first study of its kind that sought to identify research priorities for six different therapy professions and involved service users, managers and policy makers in the process.

10 References

Avery, A.J., Boki, S.P. & Sheikh, A. (2005) Identifying and establishing consensus on the most important safety features of GP computer systems: e-Delphi study *Informatics in Primary Care* 13(1) 3–12

Beretta, R. (1996) A critical review of the Delphi Technique *Nurse Researcher* 3(4) 79–89

Beresford, P. (2007). The role of service user research in generating knowledge-based health and social care: from conflict to contribution *Evidence and Policy* 3, 329–41

Bissett, M., Cusick, A. & Adamson, L. (2001) Occupational therapy research priorities in mental health *Occupational Therapy in Health Care* 14,1–19

Crisp, J., Pelletier, D. & Duffield, C. (1997) The Delphi method? *Nursing Research* 6(2) 116–18

Davidson, P., Merritt-Gray, M. & Buchanan, J. (1997) Voices from practice: mental health nurses identify research priorities *Archives of Psychiatric Nursing* 11(6) 340–45

Deane, K.H.O., Ellis-Hill, C., Dekker, K., Davies, P. & Clarke, C.E. (2003) A Delphi survey of best practice occupational therapy for Parkinson's disease in the United Kingdom *British Journal of Occupational Therapy* 66(6) 247–54

DH (Department of Health UK) (2009a) *Long Term Health Conditions* London: DH

DH (2009b) *Five Years On: delivering the diabetes national service framework* London: DH

DoHC (Department of Health and Children) (2001) *Making Knowledge Work for Health: a Strategy for Health Research* Dublin: DoHC

DoHC (2006) *Quality and Fairness: a health system for you* Dublin: DoHC

DoHC (2008a) The Report of the Commission on Patient Safety and Quality Assurance Dublin: DoHC

DoHC (2008b) The National Therapy Research Strategy, Therapy Research – Delivering Best Health: a research strategy for the therapy professions in Ireland 2008–2013 Dublin: DoHC

DoHC (2008c) Tackling Chronic Disease: a policy framework for the management of chronic diseases Dublin: DoHC

DoHC (2009) *Report of the Inter-sectoral Group on the Implementation of the Recommendations of the National Task Force on Obesity* Dublin: DoHC

DHSSPSNI (Department of Health, Social Services and Public Safety Northern Ireland) (2009) *A Workforce Learning Strategy For The Northern Ireland Health and Social Care Services 2009–2014* Belfast: DHSSPSNI

Donaldson, L. & Banatlava, N. (2007) Health is global: proposals for a UK Government-wide strategy *The Lancet* 369, 857–61

European Union Commission (2007) European Communities Brussels, *White Paper: Together for Health: a strategic approach for the EU 2008–2013* EU Commission

Faulkner, A. & Thomas, P. (2002) Editorial: User-led research and evidence-based medicine *The British Journal of Psychiatry* 180: 1–3

Ferguson, F.C, Brownlee, M. & Webster, V. (2008) A Delphi study investigating consensus among expert physiotherapists in relation to the management of low back pain *Musculoskeletal Care* 6(4) 197–210

Finger, M.E., Cieza, A., Stroll, J., Stucki, G. & Huber, E.O. (2006) Identification of intervention categories for physical therapy, based on the international classification of functioning, disability and health: a Delphi exercise *Physical Therapy* 86(9) 1203–20

Forfás & DoHC (2006) Towards Better Health: achieving a step change in health research in Ireland. Advisory Council for Science, Technology and Innovation Dublin: DoHC

Goodman, C.M. (1987) The Delphi technique: a critique *Journal of Advanced Nursing* 12, 729–34

Gordon, T. & Pease, A. (2006) RT Delphi: an efficient `round-less' almost real time Delphi method *Technology Forecasting and Social Change* 73(4) 321–33

Green, B., Jones, M. & Hughes, D. (1999) Applying the Delphi Technique in a study of GP's information requirement *Health and Social Care in the Community* 7(3) 198–205

HRB (Health Research Board) (2006) *Primary Care: research and development in Ireland: The Mant Report* Dublin: HRB

HSE (Health Service Executive) (2008) *Corporate Plan 2008–2011* Dublin: HSE

Henschke, N., Maher, C.G., Refshauge, M.K., Das, A. & McAuley, J. (2007) Low back pain research priorities: a survey of primary care practitioners *BMC Family Practice* 8(40)

Hughes, R. (2004) Competencies for effective public health nutrition practice: a developing consensus *Public Health Nutrition* 7(5) 683–91

Keeney, S., Hasson, F. & McKenna, H.P. (2006) Consulting the oracle: ten lessons from using the Delphi technique in nursing research *Journal of Advanced Nursing* 53(2)1–8

Lemmer, B. (1998) Successive surveys of an expert panel: research in decision making with health visitors *Journal of Advanced Nursing* 27, 538–45

Likert, R. (1932) A Technique for the Measurement of Attitudes *Archives of Psychology* 140: 1–55

Lindeman, C.A. (1975) Delphi survey of priorities in clinical nursing research *Nursing Research* 24(6) 434–41

Lopopolo, R.B., Schafer, D.S. & Nosse, L.J. (2004) Leadership, administration, management and professionalism (LAMP) in physical therapy: a Delphi study *Physical Therapy* 84(2) 137–50

Mcilfatrick, S.J. & Keeney, S. (2003) Identifying cancer nursing research priorities using the Delphi technique *Journal of Advanced Nursing* 42(6) 629–36

McIlrath, C., Keeney, S., McKenna, H.P. & McLaughlin, D. (2009) Identification of appropriate benchmarks for effective primary care based nursing services for adults with depression: a Delphi survey *Journal of Advanced Nursing* (in press)

McKee, M. & Belcher, P. (2004) A Health Strategy for the EU: a response to Commissioner Byrne's call to reflection *Eurohealth* 10(2) 39–42

McKenna, H.P. (1994) The Delphi Technique: a worthwhile approach for nursing? *Journal of Advanced Nursing* 19, 1221–25

McKenna, H. & Keeney, S. (2008) Delphi Studies In: Watson, R., Keady, J. & McKenna, H.P. (eds) *Researching Nursing Practice* London: Blackwell Publishing

Miles, M. B. & Huberman, M. (1994) *Qualitative Data Analysis: An Expanded Source Book,* 2nd edn, Sage Publications

Preston-Shoot, M. (2007) Whose lives and whose learning? Whose narratives and whose writing? Taking the next research and literature steps with experts by experience *Evidence and Policy* 3(3) 343–59

Raynes, M.K. & Hahn, E.J. (2000) Building consensus using the policy Delphi method *Policy, Politics & Nursing Practice* 1(4) 308–15

Rice, A. (1998) Setting speech and language therapy priorities: theory and practice *International Journal of Language and Communication Disorders* 33:S90–95

Scottish Executive Department of Health (2002) *Coronary Heart Disease and Stroke Strategy for Scotland* Scotland: Scottish Executive

Sullivan, S.J., Schneiders, A.G., McCrory, P. & Gray, A. (2008) Physiotherapists' use of information in identifying a concussion: an extended Delphi approach *British Journal of Sports Medicine* 42, 175–77

Thompson, B., MacAuley, D., McNally, O. & O'Neill, S. (2004) Defining the sports medicine specialist in the United Kingdom: a Delphi study *British Journal of Sports Medicine* 38, 214–217

Thornicroft, G., Rose, D., Huxley, P., Dale, G. & Wykes, T. (2002) What are the research priorities of mental health service users? *Journal of Mental Health* 11(1) 1–5

UKCRC (2007) *Developing the best research professionals – Summary of the public consultation responses* (The Finch Report) London: UKCRC, http://www.ukcrc.org/PDF/Nurses_report_summary_August_2007_Web.pdf (accessed 11 February 2010)

US CDCP DHHS (US Centers for Disease Control and Prevention, US Department of Health and Human Services) (2009a) *Obesity: halting the epidemic by making health easier* United States: CDCP DHHS

US CDCP DHHS (2009b) *Diabetes: successes and opportunities for population-based prevention and control* United States: CDCP DHHS, http://www.cdc.gov/nccdphp/publications/aag/ddt.htm (accessed 15 October 2009)

US CDCP DHHS (2009c) *Chronic Diseases: the power to prevent, the call to control* United States CDCP DHHS

US CDCP DHHS (2006) *Advancing the Nation's Health: a guide to public health research needs 2006–2015 (Research Guide)*, http://www.cdc.gov/od/science/PHResearch/cdcra/AdvancingTheNationsHealth.pdf (accessed 15 October 2009)

US DHHS (Department of Health and Human Services) (2008) *Statement on Addressing Healthcare Workforce Issues for the Future*, http://www.hhs.gov/asl/testify/2008/02/t20080213b.html (accessed 15 October 2009)

Wilcock, A.A. (1998) *An Occupational Perspective of Health* Thorofare, NJ: Slack Inc.

Appendix 1: Top 20 research priorities identified by the physiotherapy panel

Research priority	Mean	Consensus level (%)	Rank	Time frame
Research on how best to create a career pathway that rewards further education.	4.49	89.1	**1**	Medium
Research the effectiveness of various interventions in rehabilitation in chronic disease: respiratory; COPD; cardiovascular disease; stroke.	4.42	92.7	**2 (joint)**	Short
Research the effectiveness of primary care teams and physiotherapy in preventing acute hospital admissions.	4.42	92.7	**2 (joint)**	Short
The underpinning of clinical practice with an evidence base – how best to evaluate interventions.	4.42	87.2	**4**	Medium
Identify optimal exercise interventions and evaluate their efficacy for prevention and management of chronic disease for various patient populations/conditions, e.g. cancer, neurology, arthritis, pelvic floor dysfunction, obesity and back pain across the age ranges.	4.40	89.1	**5**	Medium
Research the physiotherapy role in reducing disability and improving the quality of life in the older population.	4.38	92.7	**6**	Medium
Research the role of exercise in the prevention of childhood obesity.	4.36	87.2	**7**	Short
Evaluate the role of physiotherapy within multidisciplinary approaches to health promotion and prevention of various conditions and events: falls in the elderly; bone health; and osteoporosis.	4.31	89.1	**8**	Medium
Randomised controlled trials for a range of interventions: manipulative therapy; electrotherapy; Bobath vs normal movement; cardiorespiratory techniques.	4.31	85.5	**9**	Medium
The underpinning of practice with an evidence base – how best to engage/educate clinicians.	4.29	85.5	**10**	Medium
Evaluate how to increase research capacity through career development/protected research time for clinicians/'research activity' as a required component of clinical roles.	4.25	85.5	**11**	Short
Ascertain the validity and reliability of clinical assessment techniques.	4.22	85.5	**12**	Medium
Conduct comparative studies of various interventions and modes: group vs individual; conservative vs innovative; in musculoskeletal; and in elderly rehabilitation.	4.22	81.8	**13**	Medium
Health economics of therapeutic interventions – identify the cost-effectiveness of therapy intervention and apply to service prioritisation.	4.20	87.3	**14**	Medium

Research priority	Mean	Consensus level (%)	Rank	Time frame
Research and evaluate stroke rehabilitation, including the effectiveness of home-based physiotherapy programmes from a rehabilitation centre post-stroke.	4.20	85.5	**15**	Medium
Research around the creation of further clinical grades i.e. advanced practitioner/prescribing/consultant.	4.20	83.6	**16**	Medium
Evaluate the effectiveness of physiotherapy interventions in intensive care units.	4.20	81.8	**17**	Medium
Ensure that researchers are equipped with the resources necessary to compete on the world stage and ensure exportability of graduates.	4.20	78.1	**18**	Medium
Evaluate aerobic and resistance exercise in the management of osteoporosis and promotion of bone health across a range of conditions, e.g. respiratory, cancer and rheumatological conditions.	4.18	87.2	**19**	Medium
Role of physiotherapy in health promotion – how best to plan, implement and evaluate input.	4.18	78.2	**20**	Medium

Appendix 2: Top 20 research priorities identified by occupational therapy panel

Research priority	Mean	Consensus level (%)	Rank	Time frame
Develop pre- and post-tools and measures to test specifically for changes in occupational performance as a result of occupational therapy intervention.	4.50	91.2	**1**	Short
Evaluate the quantitative evidence for the effectiveness and efficacy of a variety of occupation-based occupational therapy interventions and outcomes.	4.47	88.3	**2**	Short
Identify the ways in which occupational therapy interventions assist in keeping elders home longer, e.g. improved mobility.	4.44	94.2	**3**	Short
Research into occupational factors that promote health and well-being across a diverse range of areas (e.g. obesity prevention; mental health and well-being).	4.35	85.3	**4 (joint)**	Short
Seek qualitative evidence for the efficacy of a variety of interventions.	4.35	85.3	**4 (joint)**	Short
Investigate the cost-effectiveness of occupational therapy intervention in community care for dementia.	4.29	88.3	**6**	Short
Investigate the perceptions and experiences of service users regarding the effectiveness of multidisciplinary working.	4.29	85.3	**7**	Short
Investigate the cost-effectiveness of therapy professions in facilitating early discharge.	4.26	85.3	**8**	Medium
Investigate the link between meaningful occupation, health and well-being.	4.26	82.3	**9**	Short
Investigate the impact of occupation on positive ageing.	4.24	85.3	**10 (joint)**	Short
Assess the effectiveness of vocational rehabilitation generally (including mental health).	4.24	85.3	**10 (joint)**	Medium
Develop systems to monitor and track success factors for independent living and falls prevention (including the elderly population and those with dementia).	4.21	79.4	**12**	Short
Research the evidence base for a variety of rehabilitation treatments in acute paediatrics, e.g. cerebrovascular accident/ stroke (CVA), encephalitis, splinting, seating equipment, teamwork.	4.18	79.4	**13 (joint)**	Short
Qualitative, experiential studies of service users' experiences of receiving occupational therapy.	4.18	79.4	**13 (joint)**	Short
Research the impact of environmental intervention on occupation.	4.12	73.6	**15**	Medium

Research priority	Mean	Consensus level (%)	Rank	Time frame
Investigate the scope of occupational therapy in emerging areas of practice: prisons, housing planning, schools and pre-schools, neonatology.	4.09	79.5	**16**	Medium
Research ways to increase and apply evidence-based practice, including case studies and skills usage.	4.09	73.5	**17**	Medium
Identify occupationally based, clinical assessment and outcome measures, from structured to unstructured and from standardised to non-standardised.	4.06	76.5	**18**	Medium
Research best methods to enhance multidisciplinary assessments and interventions, including reviews	4.05	73.7	**19**	Medium
Identify the potential health-promoting properties of participation in occupation in well/healthy populations.	4.03	73.5	**20**	Short

Appendix 3: Top 20 research priorities identified by nutrition and dietetics panel

Research priority	Mean	Consensus level (%)	Rank	Time frame
Develop and evaluate evidence-based targeted strategies, incorporating a variety of methodologies, for the prevention and treatment of obesity across the life cycle with particular emphasis on childhood obesity.	4.40	86.7	**1**	Short
Develop outcome measures in relation to the impact of nutrition support/dietetic intervention.	4.23	80.0	**2**	Medium
Evaluate the effectiveness of models and programmes to promote healthy eating in primary schools, e.g. health promoting schools, 'munch and crunch', in terms of their self-sustaining qualities and positive outcomes.	4.13	83.4	**3**	Medium
Provide a scientific, robust evidence base and guidelines for best practice that are disease-specific and related to clinical specialties.	4.13	70.0	**4**	Medium
Audit of home enteral feeding services and the transition from hospital to community care.	4.10	76.7	**5 (joint)**	Medium
A comparative evaluation of existing programmes for improving dietary compliance in Type 2 diabetes, e.g. Desmond, Xpert and Code.	4.10	76.7	**5 (joint)**	Short
Develop and evaluate nutrition education programmes on infant feeding practices and weaning in different groups.	4.10	76.7	**5 (joint)**	Short
Identify methods of encouraging breastfeeding rates in Ireland: psychological, societal, marketing approaches, work-practice amendments.	4.07	76.7	**8**	Short
Research vitamin D status and requirements across the life cycle.	4.07	73.3	**9**	Medium
Evaluate effectiveness of dietitian participation in early intervention/child development teams for the improvement of clinical outcomes for clients with disabilities.	4.03	83.3	**10**	Medium
Evaluate the efficacy of therapeutic diets	4.03	76.7	**11**	Medium
Explore the scope and extended role of the dietitian in clinical care, e.g. changing enteral tubes; passing nasogastric (Ng) tubes; prescribing various foods, supplements and drugs.	4.03	73.4	**12**	Short
Research the most effective ways to support autonomous, self-managing patients with chronic diseases.	4.00	73.3	**13**	Medium

Research priority	Mean	Consensus level (%)	Rank	Time frame
Research motivation and behaviour change with regard to nutritional and dietary health.	3.97	80.0	**14**	Medium
Research the role of the dietitian in the management of eating disorders across care sectors.	3.97	73.3	**15**	Medium
Compare the effects of dietary therapy versus supplementation in nutritionally depleted patients.	3.93	73.3	**16 (joint)**	Medium
Evaluate effectiveness of a variety of educational/teaching methods and group-work strategies for dietary advice and develop evidence-based models from outcomes.	3.93	73.3	**16 (joint)**	Medium
Develop a database of patients receiving nutritional support through enteral/parenteral feeding at home (e.g. the BANS* data).	3.93	73.3	**16 (joint)**	Short
Evaluate student training in terms of current shortfalls and how to address them.	3.93	70	**19 (joint)**	Medium
Evaluate the range of training courses available in nutrition, e.g. FETAC**, in terms of competencies acquired and course regulation.	3.93	70	**19 (joint)**	Short

* British Artificial Nutrition Survey **(**BANS**);** ** Further Education and Training Awards Council

Appendix 4: Top 20 research priorities identified by speech and language panel

Research priority	Mean	Consensus level (%)	Rank	Time frame
Investigate ways to develop infrastructural support for research capacity building to facilitate small-scale, service-based research.	4.47	90.0	**1**	Short
Longitudinal outcome studies to investigate effects of therapy interventions for children and adolescents, e.g. functioning/school progress/coping in later life.	4.43	90.0	**2**	Medium
Determine best practice and outcome measures for severe phonological disorders and receptive/expressive language disorder.	4.40	93.3	**3**	Short
Provide evidence for best practice with specific client groups at specific developmental periods across the lifespan, e.g. Down syndrome (DS) early intervention, autism spectrum disorder (ASD) pre-school, voice and motor speech disorders etc.	4.40	90.0	**4**	Short
Develop robust (valid and reliable) outcome measures to evaluate efficacy/effectiveness of a range of therapy interventions for all age groups and conditions.	4.40	86.6	**5**	Short
Investigate optimal amounts and types of therapy for designated conditions to inform the establishment of priorities and effective service delivery models.	4.40	83.4	**6**	Medium
Evaluate early intervention for clients with disabilities in terms of long-term outcomes.	4.40	83.4	**7**	Medium
Seek precise indicators to inform the selection of therapy interventions for clients with specific conditions.	4.33	83.3	**8**	Short
Research effects of indirect interventions, e.g. training clients' parents, carers and teachers.	4.30	93.3	**9**	Short
Investigate the views of individuals with communication impairments in all aspects of the research process.	4.30	83.3	**10**	Short
Evaluate the therapy efficacy of various commercially available tools, e.g. talk tools, Lámh.	4.27	83.3	**11**	Medium
Investigate and devise effective and efficient models of service delivery for a variety of settings, client groups and populations, e.g. schools, acute care, special needs, priority socio-economic scale (SES) groups, diverse cultural and linguistic groups, refugees.	4.23	80.0	**12**	Medium
Investigate speech and language therapy service provision in Ireland in terms of identified needs of	4.23	76.7	**13**	Short

Research priority	Mean	Consensus level (%)	Rank	Time frame
service users and the extent to which they are met.				
Epidemiological research on the incidence and prevalence of communication and swallowing disorders in Ireland, across various age groups and living arrangements, e.g. children in foster care.	4.20	83.3	**14 (joint)**	Short
Develop qualitative and quantitative outcome measures across client groups.	4.20	83.3	**14 (joint)**	Medium
Conduct research that seeks the views of clients/carers with regard to experiences of living with communication and swallowing difficulties.	4.20	80.0	**16 (joint)**	Medium
Conduct research that seeks the views of clients/carers with regard to experiences of speech and language therapy and service delivery, from assessment and intervention through to discharge.	4.20	80.0	**16 (joint)**	Medium
Research effectiveness and 'best model' of speech and language therapy interventions at second level education: 12+ years.	4.17	83.3	**18 (joint)**	Medium
Identify how children with Specific Language Impairment should be supported in order to reach their maximum potential in the secondary school system.	4.17	83.3	**18 (joint)**	Medium
Research the effectiveness of the language class (a dedicated, small mainstream class for children with Specific Language Impairment with a teacher and SLT working with seven children).	4.17	83.3	**18 (joint)**	Medium

Appendix 5: Top 20 research priorities identified by podiatry panel

Research priority	Mean	Consensus level (%)	Rank	Time frame
Research the effectiveness of podiatry in reducing below knee amputations (including foot and toe) in Types 1 and 2 diabetes.	4.46	100	**1**	Short
Evaluate national practice standards for podiatry in Ireland.	4.46	92.3	**2 (joint)**	Short
Identify the role of podiatry for improving quality of life and for maintenance of mobility and independence in the elderly.	4.46	92.3	**2 (joint)**	Medium
Evaluate and enhance public knowledge and awareness of the contribution and availability of podiatry services as part of the public health/primary care system.	4.46	92.3	**4 (joint)**	Medium
Test the efficacy of podiatric nail surgery versus nail surgery performed by orthopaedic surgeons/general practitioners.	4.46	92.3	**4 (joint)**	Medium
Determine the rate of limb amputation in Ireland, including regional variations and in relation to the availability of specialist multidisciplinary input.	4.38	84.6	**6**	Short
Research into how the wider health professions are educated about the podiatry profession.	4.38	84.6	**7**	Medium
Research public accessibility to podiatry services in Ireland, with special reference to podiatry for patients with diabetes.	4.31	92.3	**8**	Medium
Evaluate the cost-effectiveness of podiatry services in terms of quantified measurement of benefits for Public Health.	4.31	84.7	**9 (joint)**	Short
Research the most effective strategies for the multidisciplinary management of diabetes.	4.31	84.7	**9 (joint)**	Medium
Identify variations in podiatry service provision across regions and sectors, including levels of professional awareness of services available.	4.23	92.4	**11**	Medium
Conduct a needs assessment for podiatry services in Ireland, with special reference to high need groups: diabetes; mental health; podopaediatric; intellectual disability; renal.	4.23	84.7	**12**	Short
Investigate the efficacy of treatments available for	4.23	77	**13**	Medium

Research priority	Mean	Consensus level (%)	Rank	Time frame
verruca.				
Epidemiological research on diabetic foot: amputation; ulceration; A&E; hospital admission.	4.15	93.3	**14**	Short
Research accessibility of specialist services, (such as vascular, orthotist), for high-risk patients in receipt of private podiatry services.	4.15	92.3	**15**	Medium
Research on rheumatology and the role of the podiatrist in the management of the rheumatoid foot.	4.15	84.7	**16**	Medium
Research and develop patient education and health promotion.	4.15	84.6	**17**	Medium
Investigate the impact of podiatry on the prevention of falls in the elderly.	4.15	77.0	**18**	Medium
Develop podiatric foot screening systems for the detection of risk among the Irish population, e.g. a universal annual foot review to reduce amputation rates.	4.15	77.0	**19**	Long
Explore perceptions and attitudes of GPs and other allied health professionals towards podiatry services and roles, in terms of impact on patient referral rates.	4.08	77.0	**20**	Medium

Appendix 6: Top 20 research priorities identified by orthoptics panel

Research priority	Mean	Consensus level (%)	Rank	Time frame
Review of referral criteria and education of referral sources.	4.57	100	**1**	Short
Investigation of areas without an orthoptic service, including effects on patient outcomes and patient satisfaction.	4.42	100	**2**	Short
Research into source, type and quality of information provided on referrals to orthoptic services.	4.28	100	**3**	Short
Research into the long-term effects of poor vision on education and employment.	4.28	85.8	**4 (joint)**	Medium
Investigation of the effectiveness of vision screening.	4.28	85.8	**4 (joint)**	Medium
Research into manpower requirements with regard to orthoptics service provision.	4.14	100	**6**	Short
Research into the accuracy of referrals to orthoptic service from the National School Entry Vision Screening Programme.	4.14	100	**7**	Short
Research into the relevance of referrals due to family history of squints.	4.14	71.5	**8**	Medium
Quantitative and qualitative research into outcomes of occlusion therapy.	4.14	71.4	**9**	Medium
Investigate the cost-effectiveness of orthoptic treatment.	4.00	100	**10**	Short
Research into continuing professional development (CPD), including CPD delivery/access for rural/stand-alone orthoptists.	4.00	85.7	**11 (joint)**	Medium
Investigate the question: Are there clinical specialists in various fields?	4.00	85.7	**11 (joint)**	Medium
Examine existing supports and barriers to professional development.	4.00	85.7	**11 (joint)**	Medium
Examine referral routes of new patients.	4.00	85.7	**11 (joint)**	Medium
Clinical research to examine the effect of refractive correction on strabismus.	4.00	85.7	**11 (joint)**	Short
Research into stroke assessment.	4.00	85.7	**11 (joint)**	Medium

Research priority	Mean	Consensus level (%)	Rank	Time frame
Explore the long-term outcomes of amblyopia treatment.	4.00	85.7	**11 (joint)**	Medium
Research into orthoptic involvement in specific learning difficulties.	4.00	85.7	**11 (joint)**	Medium
Comparative research into orthoptic practice in Ireland *vis-à-vis* other countries.	3.85	85.7	**19 (joint)**	Medium
Research into visual development in normal and special needs children.	3.85	85.7	**19 (joint)**	Medium

Appendix 7: Top 20 research priorities identified by key stakeholder panel

Research priority	Mean	Consensus level (%)	Rank	Time frame
Evaluate the cost-effectiveness of therapy interventions.	4.45	90.9	**1**	Medium
Research into quality assurance and quality improvement in the therapies.	4.45	86.4	**2**	Medium
Research the effectiveness of integrated care pathways across acute and primary care services.	4.41	90.9	**3 (joint)**	Short
An economic analysis and systematic review of early intervention and early identification strategies.	4.41	90.9	**3 (joint)**	Medium
Research into the development of effective teamworking: intra-, inter- and trans-disciplinary and evaluate impact.	4.41	86.3	**5**	Short
Identify best team models for the delivery of a patient-centred service through examination and production of evidence.	4.41	86.3	**6 (joint)**	Medium
Evaluate service delivery models from the perspective of service users.	4.41	86.3	**6 (joint)**	Medium
Identify the role of the therapies in the management and delivery of the new primary care model.	4.36	86.4	**8 (joint)**	Short
Evaluate the impact of service availability by region.	4.36	86.4	**8 (joint)**	Short
Research quality of life as a therapy outcome in chronic disease management: stroke; arthritis; musculoskeletal; pain; neurological; respiratory.	4.36	86.3	**10**	Medium
Research into the development of primary care services and primary care teams.	4.32	91	**11**	Short
Devise mechanisms to ensure that practitioners adhere to best-practice models.	4.32	86.4	**12**	Medium
Explore how best to integrate services across acute and community sectors.	4.27	90.9	**13**	Short
Develop therapy-led service delivery on continuum of care for young patients requiring stroke rehabilitation.	4.27	86.4	**14**	Medium
Develop research partnerships between clinical and academic centres.	4.27	81.9	**15**	Short
Develop the evidence base on the efficacy and effectiveness of therapy interventions to deliver best health care.	4.27	81.8	**16 (joint)**	Medium
Research how best to develop adequate clinical audit systems.	4.27	81.8	**16 (joint)**	Medium

Research priority	Mean	Consensus level (%)	Rank	Time frame
Assess the effectiveness of current practices across all care contexts from the perspective of service users.	4.27	77.3	**18**	Medium
Build knowledge and skills capacities in research methodology among the therapy professions to equip them to both carry out and critique research.	4.27	72.7	**19**	Long
Assess the short- and long-term financial implications of providing coordinated, patient-centred care to older people with multiple health conditions.	4.23	86.4	**20**	Medium

Appendix 8: Top 20 research priorities identified by service user panel

Research priority	Mean	Consensus level (%)	Rank	Time frame
Support families in the development of coping and parenting skills.	4.75	100.0	**1**	Short
Research into the role of mutual help in recovery from mental illness.	4.71	85.7	**2**	Short
Explore cancer research with regard to the therapy professions.	4.62	100.0	**3**	Short
Explore the meanings and identify factors associated with recovery.	4.57	75.0	**4**	Short
Explore the barriers to accessing services with regard to developmental coordination disorder.	4.50	100.0	**5**	Short
Competence of professionals in working and communicating with patients.	4.50	87.5	**6 (joint)**	Short
Developmental coordination disorder research: causes.	4.50	87.5	**6 (joint)**	Short
Research into dementia with regard to the therapy professions.	4.50	75.0	**8**	Short
Research the effectiveness of a range of interventions to improve care for people with diabetes.	4.42	87.5	**9**	Medium
Research into communication and coordination among therapy professions with regard to developmental coordination disorder.	4.37	100	**10**	Short
Fund longitudinal, comparative, matched-group studies of alternatives to drug treatment.	4.37	87.5	**11**	Short
Research into speech and language disorders especially with regard to the needs of children.	4.37	75.0	**12 (joint)**	Medium
Conduct an investigation into the possible barriers related to professional, specifically psychiatric labels, and how to address them.	4.37	75.0	**12 (joint)**	Short
Research the role of mutual help in the management of all chronic illnesses.	4.25	87.5	**14**	Short
Explore therapy brought to the home as an alternative to clinics for families in need.	4.25	75.0	**15 (joint)**	Medium
Undertake research that leads to the development of models for integrated working across acute, residential and community settings.	4.25	75.0	**15 (joint)**	Short
Explore the validity of the medical model, including possible connections between pharmaceuticals, universities, scientific journals and professional bodies.	4.25	75.0	**15 (joint)**	Short

Research priority	Mean	Consensus level (%)	Rank	Time frame
Carry out research that improves patient care.	4.12	87.5	**18**	Short
Research into ADHD with regard to the therapies professions.	4.12	75.0	**19**	Medium
Research into asthma at a genetic level to identify specific genes that may cause asthma.	4.12	75.0	**19 (joint)**	Short